UNITED STATES PATENT OFFICE.

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CONCEALED HINGE.

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To all whom it may concern:

Be it known that I, RICHARD W. HUBBARD, a citizen of the United States, residing at Ashtabula, in the county of Ashtabula and State of Ohio, have invented new and useful Improvements in Concealed Hinges, of which the following is a specification.

My present invention pertains to hinges, and consists in the peculiar and advantageous concealed hinge, hereinafter described and definitely claimed.

In the accompanying drawings, which are hereby made a part hereof:

Figure 1 is a horizontal section taken through my novel hinge and illustrating the same as it appears when the door is closed.

Fig. 2 is a similar view showing the appearance of the hinge when the door is open.

Fig. 3 is an elevation showing the edge of a door frame to which one edge of the door is opposed when the door is closed and also showing the hinge as it appears when the door is swung to a position at right angles to the frame.

Fig. 4 is a vertical section, taken in the plane indicated by the line 4—4 of Fig. 2, looking toward the left.

Fig. 5 is a plan view showing the hinge as connected to the door but disconnected from the door frame.

Similar numerals of reference designate corresponding parts in all of the views of the drawings.

The door frame 1 may be part of an automobile body or any other device without affecting my invention, and as illustrated it is provided in its edge with a mortise 2, in which are ledges 3.

The door 4 is provided on its face with a flange 5 that extends beyond its connected edge 6, and it has formed in said edge a recess 7 which corresponds in configuration and area to the mortise 2.

My novel hinge comprises two members and a connecting pintle 8. One of the said members is made up of a butt 9, arranged in the recess 7 and connected by screws 10 or other means to the door 4, and a plate-like arm 11 that is fixed to and extends at right angles to the face of the butt 9 and is provided with a curvilinear portion 12 which, in turn, merges into a terminal portion 13, disposed at approximate right angles to the face of the butt 9 and extending toward the same. On the end of the said terminal portion 13 is a knuckle 14 which receives the pintle 8 as illustrated. The other hinge member is made up of a butt 15 having an oblong opening 16 for the passage of the arm 11 of the first-named member, and plates 17 and 18 extending inwardly at right angles from opposite longitudinal edges of the butt 15. The plate 17 is provided at its free edge with knuckles 19 which are spaced apart so as to rest above and below the knuckle 14, and like said knuckle are arranged to receive the pintle 8, whereby the members are connected together. The butt 15 is arranged in the mortise 2 and against the ledges 3, and is fixed in position by screws embedded in said ledges, while the plates 17 and 18 are arranged snugly against opposite walls of the mortise. The butts 9 and 15 are disposed flush with the edges of the door and door frame so as to enable the door edge to closely approach the frame edge when the door is closed.

By comparison of Figs. 1 and 2, it will be observed that when the door is open, the plate-like arm 11 will practically occupy and close the opening 16 in the butt 15, and will thereby contribute to the finished appearance of the whole, and at the same time will lessen the liability of dust and dirt entering the mortise 2. It will also be appreciated that when the door is closed the hinge as a whole is completely out of sight, with the result that the finished appearance of the automobile or other device to which the hinge is applied is enhanced.

It will be further noted that the plates 17 and 18 on the door-frame member fit snugly in the mortise 2, and that when the same mentioned member is incorporated in a sheet steel body or door of an automobile, the plate 18 is calculated to serve as a guard in preventing injury to the hinge in the event of the adjacent wall of the body being bent or indented by accident.

My novel hinge is further advantageous, especially when applied to automobiles inasmuch as it has no notches or creases such as are likely to form depositories for dirt, and no projections of angular form liable to catch on skirts or other articles of clothing. The hinge is also well adapted for the purposes stated because of its compactness, simplicity and strength, and the facility with which it may be accurately applied.

While I prefer to arrange the hinge members as illustrated and described, I would